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EXAMINER

MILLER, RYAN J

ART UNIT	PAPER NUMBER
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2621

DATE MAILED: 09/17/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/675,279

Applicant(s)

JIANG, HONG

Examiner

Ryan J. Miller

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) ✓
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) ✓
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "16" has been used to designate both a transmitter on page 3, line 15 of the specification and a communication channel on page 5, line 13 of the specification. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "21" referring to a channel. Figure 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). The drawings are also objected to because Figs. 8B and 9 are not present in the disclosure. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-13, 16, 19, 21, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Li (U.S. Patent No. 6,275,531 B1).

As applied to claim 1, Li discloses a method comprising: forming layers of digital video enhancement data to achieve bandwidth requirements for the respective layers (see column 3,

Art Unit: 2621

lines 44-52: The reference describes determining a number of enhancement layer bit-streams based on the available bandwidth (i.e. forming layers of digital video enhancement data).

Therefore, bandwidth requirements are achieved for the layers.).

As applied to claim 2, Li discloses that forming a layer of video enhancement data further comprises: selecting a threshold value based upon the bandwidth requirements (see column 5, lines 47-56: The reference describes that each layer is assigned a priority identifier. This priority identifier acts as a threshold based upon the bandwidth requirements because only those layers with priority identifiers that satisfy the bandwidth requirement are transmitted.); and generating a layer of video enhancement data based upon the threshold value (see column 5, lines 57-62: The reference describes that the number of bit-stream layers generated is a function of the total possible bandwidth. Therefore, since the layers are generated based on the bandwidth and the bandwidth determines the priority identifier, then the layers are generated based on their priority (i.e. threshold value).).

As applied to claim 3, Li discloses transmitting the layer of video enhancement data over a digital communication channel (see Fig. 1: As can be seen from the figure, the enhancement data is transmitted over channel 60.); and transmitting the threshold value over the digital communication channel (see column 5, lines 62-67: The reference describes that the number of bit-stream layers reaching the destination point 100 can be further limited by the priority identifier (i.e. threshold). Therefore, this value must also be transmitted.).

As applied to claims 4-6, which merely call for an article comprising a computer-readable medium which stores computer-executable instructions for performing the processing of claims

Art Unit: 2621

1-3, Li discloses such an article since all of the processing performed by the system of Li is performed on a computer (see Fig. 1: This figure shows the system used by Li.).

As applied to claim 7, Li discloses a method comprising: processing layers of digital video enhancement data to enhance a base video signal, the layers having bandwidth requirements (see column 3, lines 11-16 and lines 44-52: The reference describes that each enhancement layer is capable of carrying information complementary to the base layer information thereby enhancing the base layer. The reference further describes that the enhancement layers are determined based on the bandwidth of the transmission channel.).

As applied to claim 8, Li discloses that the layers have approximately equal bandwidth requirements (see column 5, lines 62-67: The reference describes that the number of enhancement layers are limited by the bandwidth requirements. These layers will, therefore, have approximately equal bandwidth requirements.).

As applied to claim 9, Li discloses that the base video signal comprises a picture, and wherein each processed layer enhances the entire picture (see column 3, lines 11-16: The reference describes that adding the corresponding enhancement layers to the base layer improves the resulting images (i.e. enhances the entire picture).).

As applied to claims 10-12, which merely call for an article comprising a computer-readable medium which stores computer-executable instructions for performing the processing of claims 7-9, Li discloses such an article since all of the processing performed by the system of Li is performed on a computer (see Fig. 1: This figure shows the system used by Li.).

As applied to claim 13, Li discloses a method comprising: receiving a layer of digital video enhancement data that achieves a bandwidth requirement (see Fig. 1 and column 3, lines

Art Unit: 2621

44-52: The reference describes determining a number of enhancement layer bit-streams based on the available bandwidth. These enhancement layers are received by demultiplexor 70.), and transmitting the layer over a digital communication channel (see Fig. 1: As can be seen from the figure, the enhancement data is transmitted over channel 60.).

As applied to claims 16, which merely call for an article comprising a computer-readable medium which stores computer-executable instructions for performing the processing of claims 13, Li discloses such an article since all of the processing performed by the system of Li is performed on a computer (see Fig. 1: This figure shows the system used by Li.).

As applied to claim 19, Li discloses a method comprising: generating from a source video sequence a digital base video signal (see Fig. 1 and column 5, lines 31-35: The reference describes that from an original video input 20, a base layer bit-stream is generated (i.e. a digital base video signal).); generating from the source video sequence a body of digital video enhancement data (see Fig. 1 and column 5, lines 41-46: The reference describes that from an original video input 20, enhancement data is generated at enhancement layer encoder 40.); and generating from the body of digital video enhancement data a layer of digital video enhancement data, the layer achieving a bandwidth requirement (see column 3, lines 44-52: The reference describes determining a number of enhancement layer bit-streams based on the available bandwidth (i.e. generating a digital video enhancement data). Therefore, bandwidth requirements are achieved for the layers.).

As applied to claim 21, which merely call for an article comprising a computer-readable medium which stores computer-executable instructions for performing the processing of claim

Art Unit: 2621

19, Li discloses such an article since all of the processing performed by the system of Li is performed on a computer (see Fig. 1: This figure shows the system used by Li.).

As applied to claim 27, which merely calls for the system for performing the method of claim 19, Li discloses such a system as can be seen in Fig. 1.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 14, 15, 17, 18, 20, 22-26, and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Li (U.S. Patent No. 6,275,531 B1) and Li et al. (the article titled "An Embedded DCT Approach to Progressive Image Compression"). The arguments as to the relevance of Li in the rejections of claims 13, 16, 19, 21, and 27 are incorporated herein.

Claim 14 calls for the layer of digital video enhancement data is a first layer of digital video enhancement data that achieves a first bandwidth requirement, the method further comprising: receiving a second layer of digital video enhancement data that achieves a second bandwidth requirement, wherein the first bandwidth requirement is not equal to the second bandwidth requirement, and transmitting the second layer over the digital communication channel and claim 15, which is representative of claim 20, calls for receiving a threshold value corresponding to the layer, wherein the layer comprises a '1' bit for each magnitude greater than or equal to the threshold value.

Li discloses the use of bit planes to determine the enhancement layers. Li does not disclose the type of processing described by claims 14 and 15. Li et al., in the same field of endeavor of video processing, does disclose such processing (see Section 3, Pages 202-203: The reference discloses that several layers are formed based on different threshold levels required by the bandwidth. The reference further describes that each layer is formed based on a significant threshold and that each coefficient is assigned a magnitude of '1' if it is greater than the threshold and a magnitude of '0' if it is less than the threshold.).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Li by adding the processing steps of Li et al. because this type of processing is "more efficient" and is "easier and can be done more accurately" (see Li et al.: Section 3, Page 204).

As applied to claims 17, 18, and 22, which merely call for an article comprising a computer-readable medium which stores computer-executable instructions for performing the processing of claims 14, 15, and 20, the combination of Li and Li et al. discloses such an article since all of the processing performed by the system of Li and Li et al. is performed on a computer (see Fig. 1: This figure shows the system used by Li.).

As applied to claim 28, which merely calls for the system for performing the method of claim 20, the combination of Li and Li et al. discloses such a system as can be seen in Fig. 1 of Li.

As applied to claim 23, Li discloses a method comprising: receiving a digital base video signal comprising a set of values (see Fig. 1: As can be seen in the figure, a base layer bit-stream is received by base layer decoder 90.); and receiving a layer of digital video enhancement data



Art Unit: 2621

comprising a set of bits, each bit corresponding to a value of the digital base video signal; receiving a threshold value (see Fig. 1 and column 3, lines 11-16: As can be seen in the figure, the layer of enhancement data is received at enhancement layer decoder 80. Also, the enhancement layers are complementary to the base layer; therefore, each bit corresponds to a value of the base layer data.)

Li, however, does not disclose that for each '1' bit in the layer of digital video enhancement data, combining the threshold value with the corresponding value of the digital base video signal. Li et al., in the same field of endeavor of video processing, discloses such processing (see Section 3, Page 203: The reference describes that the residue of each layer E is combined with the corresponding threshold for that layer.).

As applied to claim 24, Li et al. discloses that receiving a sign bit corresponding to a bit in the layer of digital video enhancement data, wherein combining the threshold value with the corresponding value of the digital base video signal comprises combining by adding when the sign bit indicates positive and combining by subtracting when the sign bit indicates negative (see Section 3, Page 203: Referring to the rule of significance identification, the reference describes that the quantization residue at each layer is combined with the threshold value by adding the values when the sign bit is positive and subtracting the values when the sign bit is negative.).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Li by adding the processing steps of Li et al. because this type of processing is "more efficient" and is "easier and can be done more accurately" (see Li et al.: Section 3, Page 204).

Art Unit: 2621

As applied to claims 25 and 26, which merely call for an article comprising a computer-readable medium which stores computer-executable instructions for performing the processing of claims 23 and 24, the combination of Li and Li et al. discloses such an article since all of the processing performed by the system of Li and Li et al. is performed on a computer (see Fig. 1: This figure shows the system used by Li.).

As applied to claims 29 and 30, which merely calls for the system for performing the method of claims 23 and 24, the combination of Li and Li et al. discloses such a system as can be seen in Fig. 1 of Li.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan J. Miller whose telephone number is (703) 306-4142. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.

  
Ryan J. Miller

Ryan J. Miller  
Examiner  
Art Unit 2621

  
LEO BOUDREAU  
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